### DEPARTMENT of ENVIRONMENTAL SERVICES Water Division - Watershed Management Bureau

### LAKE TROPHIC DATA

# MORPHOMETRIC:

Lake: SONDOGARDY POND	Lake Area (ha):	16.51
Town: NORTHFIELD	Maximum depth (m):	4.9
County: Merrimack	Mean depth (m):	2.7
River Basin: Merrimack	Volume (m³): 4	43000
Latitude: 43°23'16" N	Relative depth:	1.1
Longitude: 71°36'50" W		1.00
Elevation (ft): 397	Areal water load (m/yr):	29.79
Shore length (m): 1300	, i = ,	11.10
Watershed area (ha): 1139	.6 P retention coeff.:	0.43
<pre>% watershed ponded: 0</pre>	.0 Lake type: na	tural

BIOLOGICAL:	5 January 1999	23 June 1998
DOM. PHYTOPLANKTON (% TOTAL) #1	NO WINTER PLANKTON	MELOSIRA 60%
#2	ANALYZED	DINOBRYON 10%
#3		RHIZOSOLENIA 10%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		14.67
DOM. ZOOPLANKTON (% TOTAL) #1		COLLOTHECA 21%
#2		GASTROPUS 17%
#3		KERATELLA 16%
ROTIFERS/LITER		268
MICROCRUSTACEA/LITER		75
ZOOPLANKTON ABUNDANCE (#/L)		351
VASCULAR PLANT ABUNDANCE		Common
SECCHI DISK TRANSPARENCY (m)		1.5
BOTTOM DISSOLVED OXYGEN (mg/L)	12.0	0.5
BACTERIA (E. coli, #/100 ml) #1		13
#2		13
#3		

# SUMMER THERMAL STRATIFICATION:

# weakly stratified

Depth of thermocline (m): None Hypolimnion volume (m³): None Anoxic volume (m³): 10100

CHEMICAL:			SONDOGARI NORTHFIEI		
	5 Janua	ary 1999	23 3	June 1998	
DEPTH (m)	1.0	3.0	1.0		3.0
pH (units)	6.7	6.4	6.6		6.2
A.N.C. (Alkalinity)	10.0	9.3	6.2		5.2
NITRATE NITROGEN	0.07	0.07	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.40	0.40	0.30		0.40
TOTAL PHOSPHORUS	0.009	0.009	0.016		0.023
CONDUCTIVITY (µmhos/cm)	125.6	126.3	87.4		63.7
APPARENT COLOR (cpu)	22	23	49		70
MAGNESIUM		***	1.21		
CALCIUM	***************************************		3.1		
SODIUM			12.0		
POTASSIUM			0.59		
CHLORIDE	27	27	19		12
SULFATE	5	5	4	,	3
TN : TP	52	52	19		17
CALCITE SATURATION INDEX			3.4		

All results in mg/L unless indicated otherwise

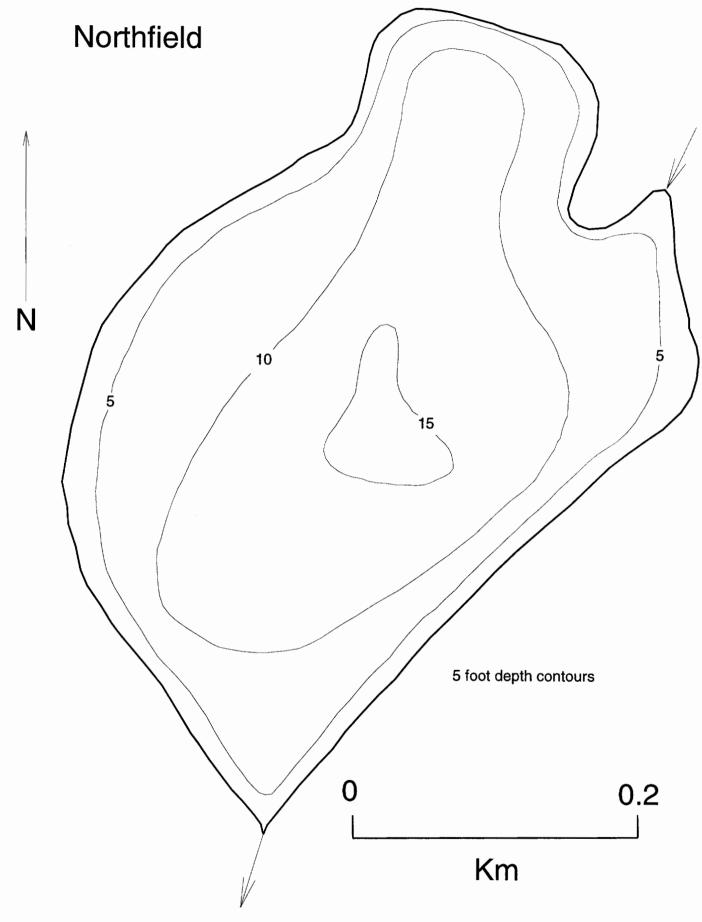
TROPHIC CLASSIFICATION: 1998

D.O.	s.D.	PLANT	CHL	TOTAL	CLASS
**	4	3	3	10	Eutro.

#### COMMENTS:

- 1. aka Northfield Pond.
- 2. This pond was previously surveyed and classified in 1982. It was rated mesotrophic in 1982 and eutrophic in 1998 (one less trophic point in 1998 would have resulted in a mesotrophic rating). The major change in trophic condition was in chlorophyll which was twice as high in 1998 (6.6 vs 14.7 mg/m³). More frequent sampling (e.g., volunteer monitoring the pond joined VLAP in 1998 and chl was 6 to 7 mg/m³ in 1998 and 1999) is needed to determine if this change is a trend or within the natural seasonal or yearly variation (the VLAP data suggests it's normal variation).
- 3. No boat launch site; we used the town beach to put in the boat.

# Sondogardy Pond



#### FIELD DATA SHEET

LAKE: SONDOGARDY POND

DATE: 06/23/1998 WEATHER: CLOUDY & COOL (70F); LT BREEZE

TOWN: NORTHFIELD

DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	21.4	8.6	95 %
1.0	17.8	9.7	99 %
2.0	14.9	8.7	83 %
3.0	13.8	6.0	57 %
4.0	12.6	0.5	5 %
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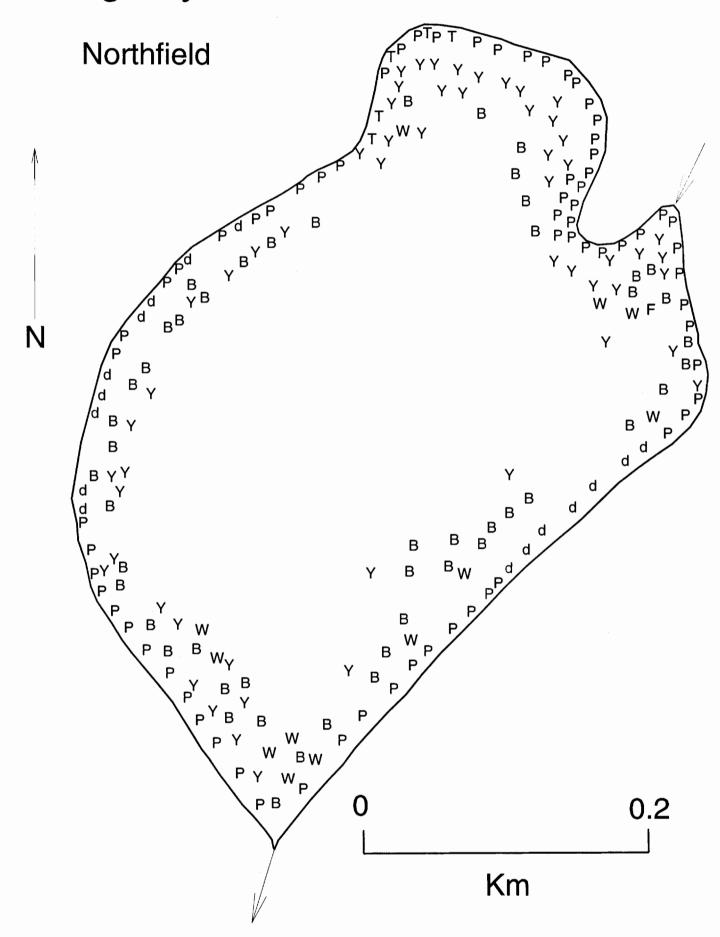
SECCHI DISK (m): 1.5 COMMENTS:

BOTTOM DEPTH (m): 4.5

TIME: 1125

\*Dissolved oxygen values are in mg/L

# Sondogardy Pond



### AQUATIC PLANT SURVEY

LAK	E: SONDOGARDY POND	TOWN: NORTHFIELD	DATE: 06/23/1998
Vors	PLANT	NAME	ADUNDANCE
Кеу	GENERIC	COMMON	ABUNDANCE
P	Pontederia cordata	Pickerelweed	Scattered
У	Nuphar	Yellow water lily	Common
В	Brasenia schreberi	Water shield	Common
W	Potamogeton	Pondweed	Scattered
	Myriophyllum humile	Water milfoil	Sparse
d	Dulichium arundinaceum	Three-way sedge	Sparse
F	Nymphoides cordatum	Floating heart	Sparse
T	Typha	Cattail	Sparse
	Utricularia	Bladderwort	Sparse
	Potamogeton robbinsii	Robbins pondweed	Sparse
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		OVERALL ABUNDANCI	E: Common

## GENERAL OBSERVATIONS:

1. Bladderwort, Robbins pondweed and the native species of milfoil (*M. humile*) fragments were observed floating in the water but are not depicted on the map. Rooted stands of these plants were not found.